AF/1751

PATENT
Customer No. 22,852
Attorney Docket No. 5725.0489-00

APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

Gérard LANG et al.

Application No.: 09/424,116

Filed: January 6, 2000

For: OXIDATION DYEING COMPOSITION FOR KERATINOUS FIBRES CONTAINING A 3-AMINOPYRIDINE AZO DERIVATIVE AND DYEING METHOD USING SAID COMPOSITION

Group Art Unit: 1751

Examiner: M. Einsmann 5-8-02

Commissioner for Patents and Trademarks
Washington, DC 20231

Sir:

**TRANSMITTAL OF APPEAL BRIEF (37 C.F.R. 1.192)**

Transmitted herewith in triplicate is the APPEAL BRIEF in this application with respect to the Notice of Appeal filed on October 3, 2001.

This application is on behalf of

☐ Small Entity ☒ Large Entity

Pursuant to 37 C.F.R. 1.17(f), the fee for filing the Appeal Brief is:

☐ $160.00 (Small Entity)

☒ $320.00 (Large Entity)

TOTAL FEE DUE:

| | |
|---|---|
| Notice of Appeal Fee | $ 320.00 |
| Extension Fee (if any) | $1,960.00 |
| Total Fee Due | $2,280.00 |



FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

☒ Enclosed is a check for $2,280.00 to cover the above fees.

PETITION FOR EXTENSION. If any extension of time is necessary for the filing of this Appeal Brief, and such extension has not otherwise been requested, such an extension is hereby requested, and the Commissioner is authorized to charge necessary fees for such an extension to our Deposit Account No. 06-0916. A duplicate copy of this paper is enclosed for use in charging the deposit account.

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: May 3, 2002

By: _____
Mark J. Feldstein
Reg. No. 46,693

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

OIPE JC177
MAY 0 3 2002
PATENT & TRADEMARK OFFICE

PATENT
Customer No. 22,852
Attorney Docket No. 5725.0489-00

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:

Gérard LANG et al.

Application No.: 09/424,116

Filed: January 6, 2000

For: OXIDATION DYEING COMPOSITION FOR KERATINOUS FIBRES CONTAINING A 3-AMINOPYRIDINE AZO DERIVATIVE AND DYEING METHOD USING SAID COMPOSITION

Group Art Unit: 1751

Examiner: M. Einsmann



Commissioner for Patents and Trademarks
Washington, DC 20231

Sir:

**APPEAL BRIEF UNDER 37 C.F.R. § 1.192**

In support of the Notice of Appeal filed October 3, 2001, the period of response extended by the accompanying petition and fee, and pursuant to 37 C.F.R. § 1.192, Appellants present in triplicate this brief and enclose herewith a check for the fee of $320.00 required under 37 C.F.R. § 1.17(c).

This appeal is in response to the final rejection dated May 8, 2001, of claims 26-60, which are set forth in the attached Appendix. If any additional fees are required or if the enclosed payment is insufficient, Appellants request that the required fees be charged to Deposit Account No. 06-0916.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

## I. Real Party In Interest

L'Oréal, S.A. is the assignee of record.

## II. Related Appeals and Interferences

Appellants' undersigned legal representative knows of no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal. However, in an abundance of caution, Appellants' undersigned legal representative informs the Board that an Appeal Brief in Application No. 09/424,119, has been concurrently filed with this Appeal Brief.

## III. Status Of Claims

Claims 26-60 are pending in this application. No claim has been allowed. Claims 26-60 have been finally rejected under 35 U.S.C. § 103(a).

Concurrently with the filing this Appeal Brief, Appellants have filed a Terminal Disclaimer to obviate the provisional obviousness-type double patenting rejection based on copending Application No. 09/424,119 in view of U.S. Patent No. 4,976,742 to Rose. Entry of this Terminal Disclaimer is requested.

## IV. Status Of Amendments

A response under 37 C.F.R. § 1.116, filed on August 1, 2001, was entered. No claim has been amended.

## V. Summary Of Invention

The invention relates to a composition for the oxidation dyeing of keratin fibres, and in particular human keratin fibres such as the hair, comprising, in a medium which is suitable for dyeing, at least one oxidation base, at least one 3-aminopyridine derivative as direct dye, and at least one substituted meta-aminophenol as coupler, as well as to the dyeing process using this composition. Page 1, lines 4-11.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

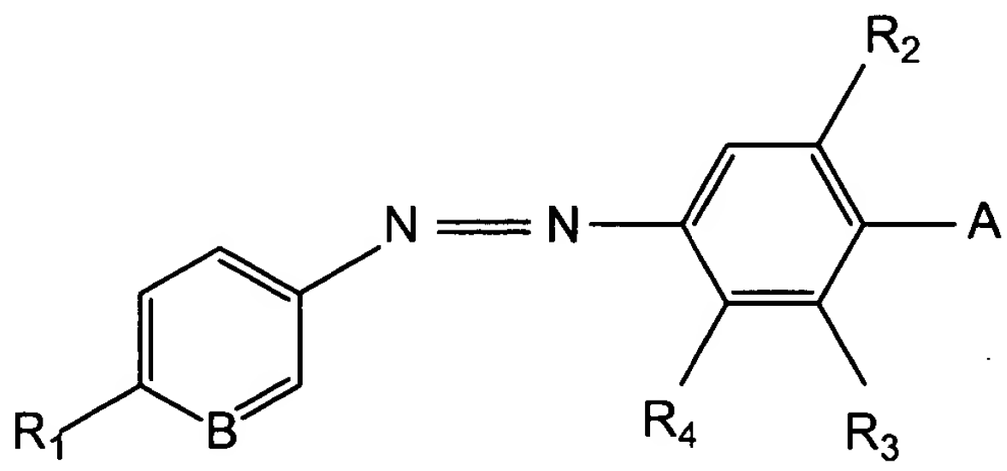
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

As disclosed in the specification, it is possible to obtain novel dyes which are capable of giving intense and chromatic colorations, which show little selectivity and which satisfactorily withstand the various attacking factors to which the fibres may be subjected, by combining at least one oxidation base, at least one suitably selected 3-aminopyridine derivative as direct dye, and at least one suitably selected meta-aminophenol derivative. Page 3, lines 10-18.

According to one embodiment, there is composition for the oxidation dyeing of keratin fibers comprising:

a) at least one oxidation base, and

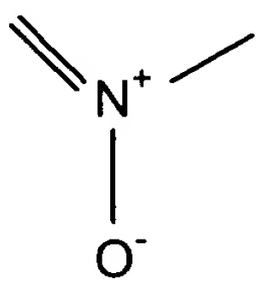
b) as direct dye, at least one 3-aminopyridine derivative chosen from the compounds of formula (I):



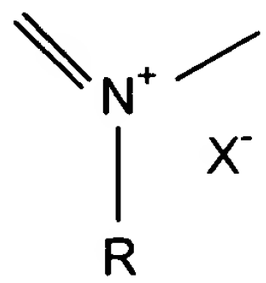

(I)

in which:

- B is chosen from formula (Ia) and (Ib):




(Ia)




(Ib)

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

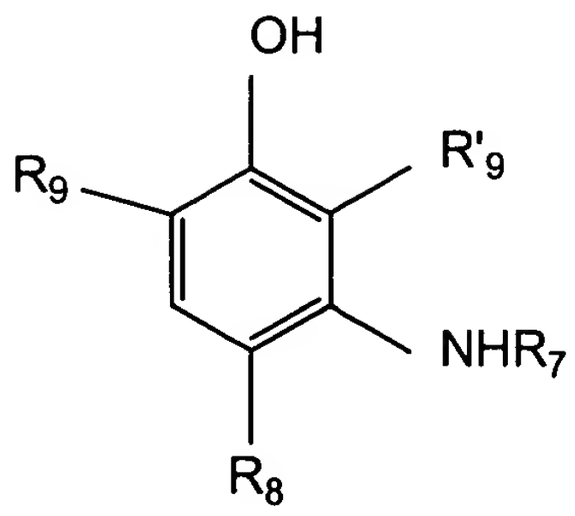
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- R is a $C_1$-$C_4$ alkyl radical;
- $R_1$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_2$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_4$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a nitro, an amino radical and a ($C_1$-$C_4$)acylamino radical;
- $R_3$ is a hydrogen atom, or $R_4$ and $R_3$ together form a 6-membered unsaturated ring bearing a hydroxyl substituent chelated with one of the nitrogen atoms of the azo double bond;
- A is a residue $-NR_5R_6$ in which $R_5$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical and $C_2$-$C_4$ polyhydroxyalkyl radical and $R_6$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a phenyl ring and a $-CH_2-SO_3Na$ radical;
- $X^-$ is chosen from a monovalent anion and a divalent anion, and

c) at least one coupler chosen from a meta-aminophenol derivative of formula (II), and an addition salt thereof with an acid:

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com




(II)

in which:

- $R_7$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical and a $C_1$-$C_4$ monoaminoalkyl radical;
- $R_8$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_9$ and $R'_9$, which are identical or different, are chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ alkoxy radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a $C_1$-$C_4$ monohydroxyalkoxy radical and a $C_2$-$C_4$ polyhydroxyalkoxy radical;

with the proviso that at least one of the substituents $R_7$, $R_8$, $R_9$ and $R'_9$, is not a hydrogen atom. Page 3, line 21 - page 6, line 7.

## VI. Issues

Two issues presented for appeal are as follows:

### A. Patentability under 35 U.S.C. § 103(a)

Whether claims 26-60 are patentable under 35 U.S.C. § 103(a) over U.S. Patent No. 4,025,301 to Lang in view of U.S. Patent No. 4,588,410 to Konrad. As discussed

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

below, the Examiner's rejection fails to present a *prima facie* case of obviousness due to (1) the absence of a reasonable expectation of success for the proposed combination and (2) the absence of a motivation or suggestion for the proposed combination.

**B. Patentability under Obviousness-Type Double Patenting**

Whether claims 26-60 are patentable under the doctrine of obviousness-type double patenting over Application No. 09/424,119 in view of U.S. Patent No. 4,976,742 to Rose. While Appellants do not agree with the rejection, for the sake of simplifying the issues on appeal, a Terminal Disclaimer over copending Application No. 09/424,119 is concurrently filed herewith to obviate the rejection. Entry of the Terminal Disclaimer is requested.

## VII. Grouping Of Claims

Each claim of this patent application is separately patentable, and upon issuance of a patent will be entitled to a separate presumption of validity under 35 U.S.C. § 282. For convenience in handling this Appeal, however, the claims will be grouped in one group. Thus, pursuant to 37 C.F.R. § 1.192(c)(7), in this Appeal, the rejected claims will stand or fall together with respect to the two pending rejections.

## VIII. Argument

### A. Claims 26-60 are Patentable Under 35 U.S.C. § 103(a) Over U.S. Patent No. 4,025,301 (Lang) in View of U.S. Patent No. 4,588,410 (Konrad).

The Examiner rejected claims 26-60 under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 4,025,301 to Lang (Lang) in view of U.S. Patent No. 4,588,410 to Konrad (Konrad). This rejection is improper for at least the reasons that (1) due to the unpredictability in the art, there is no reasonable expectation of success for the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

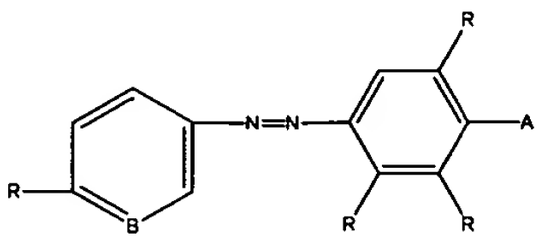
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

proposed combination; and (2) there is no motivation or suggestion for the specific combination suggested by the Examiner.

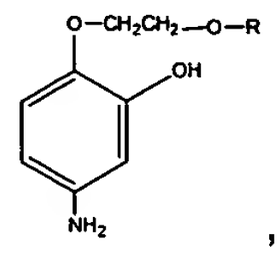
BACKGROUND

A direct dye is a colored species that can be directly absorbed to create a temporary dyeing of the fiber. (*See, e.g.,* Konrad, col. 2, lns. 19-23.) Direct dyes can be contrasted with oxidation dyes, which are another distinct class of dyes that use uncolored or lightly colored reactants (bases (developers) and couplers) capable of penetrating into fibers where they are oxidized and co-polymerized to form colored species and a permanent or semi-permanent dyeing of the fiber. (*See, e.g.,* Konrad, col. 1, lns. 57-68.)

Lang is directed to direct dye compositions for living human hair containing azo direct dyes derived from 3-amino pyridine, and having the general formula




. (Lang, col. 1, lns. 5-19.)

Konrad is directed a 2-hydroxy-4-aminobenzene having the formula 

, which is disclosed to be useful as an oxidation dye coupler. (Konrad, col. 2, lns. 38-64.)

THE EXAMINER'S POSITION

The Examiner argues that "[i]t would have been obvious to… at least partially substitute the m-aminophenol coupler in the composition and process of Lang… because [a] Lang does not require any specific oxidation dyes… and [b] Konrad teaches that the claimed substituted m-aminophenols have various improvements over the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

conventionally used m-aminophenols..." (Office Action dated May 8, 2001, pg. 3, lns. 15-20.)

The rejection, however, is flawed for at least the reasons that:

(1) the Examiner has not cited and the references do not contain a reasonable expectation of success for the Examiner's proposed combination; and

(2) the alleged motivation is not applicable to the specific combination suggested by the Examiner.

## 1. NO REASONABLE EXPECTATION OF SUCCESS

Although a *prima facie* case of obviousness requires evidence of a reasonable expectation of success found in the art (*see, e.g. In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991)), the Examiner has not cited and Lang and Konrad do not contain any such evidence. The art is, in fact, unpredictable, thus undermining the Examiner's position. *Id.* at 1443 ("evidence of uncertainty... tends to rebut" an obviousness rejection). As discussed below, this unpredictability is well documented, and has even been relied upon by the Examiner. The well-known and specific evidence of unpredictability undermine the rejection.

### a. The Present Specification Shows that Dye Properties Change Unpredictability Based on Differences of as Little as One Component.

Evidence of record shows that the properties of compositions within the scope of the presently claimed invention vary unpredictably from other compositions based on differences of as little as one component. More specifically, compositions that are identical but for the replacement of an m-aminophenol coupler for an equal molar

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

amount[1] of a substituted m-aminophenol coupler according to formula (II) of the present invention leads to unpredictable changes in the color properties of dyed hair, as discussed below. (Specification, pg. 27-31.)

According to these results, as compared with compositions comprising m-aminophenol the use of a substituted m-aminophenol coupler according to formula (II) leads to *increased* hue (dH), *decreased* "value" or intensity (dV), *increased* "chroma" or saturation (dC), and *increased* color difference or coloration (ΔE). For example, in a composition comprising the direct dye 4'-dimethylaminobenzene-1'-azo-3-pyridine N-oxide, when m-aminophenol (Example 2) is replaced with an equal molar amount of 5-amino-2-methylphenol (Example 1) at least the following differences result:

- the change hue (dH) *increases* from 12.1 to 16.8;
- the change in intensity (dV) *decreases* from 3.4 to 3.1;
- the change in saturation (dC) *increases* from 0.5 to 2.2; and
- the change in coloration (ΔE) *increases* from 29.6 to 36.0.

(Specification, page 30.) As another example, in a composition comprising the direct dye 2'-acetylamino-4'-dimethyl-aminobenzene-1'azo-1-ethyl-3-pyridinium ethosulphate, when m-aminophenol (Example 4) is replaced with an equal molar amount of 5-amino-2-methylphenol (Example 3) at least the following differences result:

- the change hue (dH) *increases* from 14.6 to 18.2;
- the change in intensity (dV) *decreases* from 3.6 to 3.3;

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

[1] Compositions 1 and 3 comprise 0.369 grams of 5-amino-2-methylphenol, which, given a molecular weight of 123.15 g/mole, is $2.996 \times 10^{-3}$ moles (0.369 g / 123.15 g/mole). Compositions 2 and 4 comprise 0.327 g meta-aminophenol, which, given a molecular weight of 109.13, is $2.996 \times 10^{-3}$ moles (0.327 g / 109.13 g/mole). (Specification, pg. 27.)

- the change in saturation (dC) *increases* from 0.1 to 1.4; and
- the change in coloration (ΔE) *increases* from 31.2 to 35.6.

(Specification, page 30.)

It should be noted that the above comparison from pages 27-31 of the present specification is directly analogous to the modification of Lang proposed by the Examiner. That is, the Examiner proposes substituting Lang's m-aminophenol with a substituted m-aminophenol. This is exactly the difference between Examples 1 and 2, and between Examples 3 and 4 in the present specification. Accordingly, the unpredictable results are of particular relevance to the Examiner's argument.

With respect to the proposed substitution in Lang's diazo-bridged direct dye composition, the Examiner has not cited and the references do not contain any basis for predicting the color effects on dyed hair. The only even arguably relevant statements are those in Konrad regarding "weak color tone" and "intensive fashionable copper tones." (Konrad, col. 2, lns. 32-38; col. 3, lns. 1-5.) Although the precise meanings of these statement are not fully elucidated in that reference, if anything they also show unpredictability. That is, Konrad does not remedy the deficiency of a reasonable expectation of success.

For instance, assuming for the sake of argument only that Konrad's statements "weak color tone" and "intensive fashionable copper tones" are a prediction of increased hue, intensity, saturation, and coloration, it is even more clear that the observed results are unpredictable. In fact, certain results are exactly the opposite of what Konrad might suggest. Specifically, there is no basis for predicting the observed increase in hue, saturation, and coloration coupled with a concurrent decrease in intensity. In fact, to the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

extent that anything would be expected from Konrad's statements, one would expect an increased intensity when m-aminophenol is replaced with a substituted m-aminophenol coupler. However, the actual result is just the opposite - a decrease in intensity. This further demonstrates the unpredictability in the art relied upon by the Examiner and further undermines the Examiner's position.

**b. The Examiner has Recognized the Unpredictability in the Art.**

The Examiner has expressly recognized the potential for unpredictable interactions among the components of a dye composition. This recognition of unpredictability is inconsistent with the rejection, which is undermined by an unpredictability and the concurrent absence of a reasonable expectation of success. *Vaeck* at 1443.

For example, the Examiner recognized that the effect of additional components in a dye composition cannot be predicted. The Examiner even relied upon this principle in support of the present rejection. Specifically, the Examiner noted that "Lang's composition contains a mixture of oxidation bases and couplers... not present in the compared compositions. *It is unclear how these additional dyes effect the overall results*." (Office Action of May 8, 2001, pg. 4, lns. 12-15 (emphasis added).)

The Examiner's position that, on the one hand, there is a reasonable expectation of success for her proposed combination and, on the other hand, that the effects of dye components in a composition cannot be predicted is inherently inconsistent. If it is unclear to the Examiner "how these additional dyes effect the overall results," the Examiner cannot also, in good faith, take the position that there is a reasonable expectation of success for the proposed combination of Konrad's oxidation dye

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

component and Lang's direct dye based composition. This inconsistency further undermines the Examiner's position, and demonstrates that even from the Examiner's perspective there to is no reasonable expectation of success for the proposed combination.

**c. As Further Evidence of No Reasonable Expectation of Success, Dye Components can Interact to Unpredictably Effect the Properties of the Composition, Including its Toxicity.**

In C. Zviak, *The Science of Hair Care*, Marcel Kekker, Inc., New York, NY, pg 329 (1986) ("Zviak"), copy attached, Zviak explains that, with respect to the safety of finished products, "[a]ll finished cosmetic products must be evaluated for safety in use to make sure that they do not, under normal and foreseeable conditions, constitute a potential hazard for the consumer...." Zviak explains that such testing is not easily accomplished due to unpredictable component interactions. Specifically,

> [i]t might seem that a sensible way of proceeding would be to conduct most toxicological tests on the ingredients, which would reduce the amount of experimentation and cost of developing finished products. However, *experience has shown that the formulation itself is the important element*. It determines local tolerance after a single or repeated application, eye and/ or lung mucosa tolerance, the degree of absorption through the skin, etc.

(*Id.* (emphasis added).) Further, according to Zviak, synergistic effects that make a product more or less toxic may occur. That is, "[a]part from the effect of the vehicle, it has been observed that the association of different compounds can produce either synergistic toxicity or, on the contrary, a mitigation or even inhibition of toxic effects." *Id.*

Toxicity is, of course, a relevant factor to be considered for hair dyes. For example, Konrad recognizes that oxidation dye compositions must be unobjectionable

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

from the toxicological and dermatological point of view. (Konrad, col. 2, lns. 6-11.) The cited references, however, provide no basis from which one skilled in the art could reasonably predict the toxicity of the combination proposed by Examiner.

Therefore, given that the toxicological properties of a hair dye composition are known to vary unpredictably due to component interactions and in view of Konrad's recognition of and concern over this issue, there is no reasonable expectation that the Examiner's proposed combination would be non-toxic. That is, since a hair dye composition should be non-toxic, there is no reasonable expectation of success for the Examiner's proposed combination to be useful for hair dyeing, the intended purpose of the primary and secondary references.

Accordingly, the Examiner's proposed combination of various reactive chemical components fails to support a *prima facie* case of obviousness against the presently claimed invention.

**2. MOTIVATION TO COMBINE**

The threshold for establishing a motivation to combine is high. As explained by the Federal Circuit, "[o]ur case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references." *In re Dembiczak,* 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

It is not sufficient to merely "find every element of a claimed invention in the prior art [and for] an examiner to use the claimed invention itself as a blue print for piecing together elements... Such an approach would be an illogical and inappropriate process

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

by which to determine patentability." *In re Rouffet*, 47 U.S. P.Q.2d 1453, 1457 (Fed. Cir. 1998) (citations and quotations omitted).

The Examiner can meet the burden of establishing a *prima facie* case of obviousness "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988) (internal citations omitted) (emphasis added).

On January 18, 2002, the Federal Circuit again reaffirmed the Examiner's high burden to establish a *prima facie* case of obviousness and emphasized the requirement for specificity. In *In re Sang-Su Lee*, the Federal Circuit held that "[t]he factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with." 277 F.3d 1338, 1433 (Fed. Cir. 2002). Further, the Federal Circuit explained that

> [t]he need for specificity pervades this authority... the examiner can satisfy the burden of showing obviousness of the combination only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.

*Id.* (internal citations and quotation omitted) (emphasis added).

However, as was the case in *Fine*, the showing of an objective teaching "has not done." 5 U.S.P.Q.2d at 1599. Specifically, the Examiner has not based the rejection on an objective teaching to combine Lang's cationic direct dye with Konrad's substituted m-aminophenol coupler.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

**a. Objective Teachings of Motivation are Absent.**

Konrad and Lang, taken together, fail to provide an objective teaching that would lead one skilled in the art to combine Konrad's substituted m-aminophenol coupler in a composition according to Lang comprising both an oxidation base and a diazo-bridged direct dye. Moreover, Konrad and Lang fail to provide an objective teaching to combine the direct dye of Lang example 14 with Konrad's substituted m-aminophenol coupler. These deficiencies preclude a *prima facie* case of obviousness against the presently claimed invention.

The Examiner relied on Konrad for providing motivation for the suggested modification of Lang. Specifically, the Examiner argued that:

> It would have been obvious... to at least partially substitute the m-aminophenol coupler in the composition and process of Lang... because Lang does not require any specific oxidation dyes for use in the patentee's composition, and Konrad teaches that the claimed substituted m-aminophenols have various improvements over the conventionally used m-aminophenols.

(Office Action of January 4, 2001 , pg. 4, lns. 3-10.) In other words, the Office relies on Konrad for providing motivation to use substituted m-aminophenols in oxidation dyes, and simply notes that the suggested modification is not expressly excluded by Lang.

However, the Office has not shown and Konrad and Lang, taken together, do not contain the requisite motivation for the Examiner's proposed substitution in Lang cationic direct dye based composition of m-aminophenol with Konrad's substituted m-aminophenol. The Examiner has, apparently, failed to fully appreciate the fact that Lang's diazo-bridged direct dye compositions, such as that of example q, are not mere

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

static mixtures of unrelated components. They are not analogous to physical compositions, such as a mixture of different size ball bearings.

Rather, the diazo-bridged direct dye composition must be considered as a whole, and understood to have a unique chemical identity that, due to the potential for chemical interactions and reactions, is more than merely the sum of its components. The failure to recognize the potential for interactions between chemical components is starkly inconsistent with even a basic understanding of chemistry. *See, e.g.*, *In re Larsen*, 130 USPQ 209, 213 (CCPA 1961) (Martin, J., concurring) ("...I am aware that machines differ from chemical compounds in that the individual parts of a machine retain their identity and merely interact or cooperate in producing some desired result while chemical reactants lose their identity in reacting to produce a new substance...")

The Examiner's reliance on the, at best, very generalized teaching of Konrad as motivation for the Examiner's proposed combination is contrary to the Federal Circuit decision on combining references absent a specific motivation of record for the proposed combination. For example, in *In re Vaeck*, the Federal Circuit reversed the Office's rejection under § 103 where the rejection was based on a combination of references that lacked a specific suggestion for the proposed combination. 20 USPQ2d at 1443. The facts and holding of *Vaeck* are relevant to the present issues.

In *Vaeck*, the primary reference disclosed a method using a transformed cyanobacterial host while the secondary references suggested combination with a transformed bacterial host while. *Id*. To overcome the deficiency between the primary and secondary references with respect to the type of host (cyanobacterial vs. baterial), the Office argued that there is a "similarity" between cyanobacteria and bacteria, and

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

that they would be interchangeable. *Id.* However, the Federal Circuit noted that "cyanobacteria and bacteria are not identical," therefore the Office's proposed motivation based on bacteria was insufficient to support the specific combination with a cyanobacteria host. *Id.* The Court also distinguished *In re O'Farrell*, 7 USPQ2d 1988 (Fed. Cir. 1988), since, in that case, "the prior art *explicitly* suggested the substitution...." *Vaeck* at 1444 (emphasis added, internal citations and quotations omitted).

Much like *Vaeck*, the primary reference (Lang) relates one type of dye composition (a specific cationic diazo-bridged direct dye composition, further comprising an oxidation base and coupler) while the secondary reference (Konrad) relates to another type of dye composition (a purely oxidation dyeing composition). The Examiner's proposed combination rests on the premise that any suggestion in the secondary reference with respect to oxidation dyes is equally applicable to a cationic direct dye composition. This is a false premise.

As in *Vaeck*, the subject matter of the primary and secondary references are not identical. Direct dyes and oxidation dyes are chemically distinct, and have distinct applications and effects. *See* Background, *supra.* The "various improvements" of Konrad, even as alleged by the Examiner, are not with respect to the use of Konrad's substituted m-aminophenol in a direct dye based composition according to Lang.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Konrad is silent with respect to compatibility and use with direct dyes.[2] Accordingly, the Examiner's proposed motivation based on an oxidation base is insufficient to support the specific combination with a cationic direct dye. *Vaeck* at 1443. Likewise, the Examiner's proposed combination is distinguished from *O'Farrell* for at least the reason that the references do not "explicitly" suggest the substitution of Konrad's oxidation coupler into Lang's diazo-bridged direct dye composition.

The premise of the Examiner's argument (that a teaching or suggestion with respect to oxidation dye systems are equally applicable to a cationic direct dye composition) is also unsupported by any evidence of record. However, unless "substantial evidence" found in the record supports the factual determinations central to the issue of patentability, the rejection is improper and should be withdrawn. *In re Zurko*, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001). More specifically, in *Zurko* the Federal Circuit explicitly required "concrete evidence in the record in support of these [core factual] findings" in a determination of patentability. *Id*. Such concrete evidence in support of the use of Konrad's substituted m-aminophenol coupler with Lang's non-conventional direct dye composition is absent from the Examiner's argument, and is absent from the record. *See also Lee*, 277 F.3d at 1433.

Moreover, by focusing on an abstract teaching of Konrad that does not address any of the specific motivation issues identified below, the Office has failed to treat the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

[2] Konrad identifies various other components that may be used with their substituted m-aminophenol, such as wetting agents and thickeners. (Konrad, col. 3, ln. 63 - col. 4, ln. 18.) Notoriously, there is no mention in Konrad of compatibility with direct dyes, or any suggestion of the use of direct dyes with the disclosed m-aminophenol. The only mention of direct dyes is as background (Konrad, col. 2, lns. 19-24), but this is distinct and separate from Konrad's compositions comprising a substituted m-aminophenol.

composition of Lang example q as a whole, or to even recognize that it is a chemical composition composed of a large number of components that have potentially hundreds of chemical interactions or reactions to consider. In short, the Office has failed to recognize that the composition containing base B and coupler C is a different composition than the composition containing base B, coupler C, and direct dye D.

Consequently, among other things, missing from the objective teaching of Konrad and Lang is the motivation to:

- use Konrad's coupler in place of m-*aminophenol* in a composition comprising a direct dye;
- use Konrad's coupler in place of m-aminophenol in a composition comprising the direct dye of Lang example 14; and
- use Konrad's coupler in place of m-aminophenol in a composition comprising all fourteen of the chemical components of Lang example q.

More specifically, although Konrad might broadly suggest the possibility of compositions comprising mixtures of bases and couplers (col. 3, lines 39-43), and might also broadly suggest the possibility of adding certain additional cosmetic components suitable for use with the coupler (col. 3, line 54 - col. 4, line 18), neither Konrad nor Lang provide any motivation for using Konrad's coupler in a composition comprising a direct dye, much less the specific class of direct dyes disclosed in Lang, much less the particular direct dye of Lang example 14.

In fact, given that Konrad does not include direct dyes among the specifically identified compatible components (*see* Konrad, col. 3, line 63 - col. 4, line 18), it is even more evident that Konrad does not provide an objective teaching directed towards the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Examiner's suggested combination. Furthermore, and of equal importance, the references also lack any motivation for using Konrad's coupler in compositions comprising all the potentially interacting components of Lang example q.

Accordingly, since the cited references lack an objective teaching for the suggested combination/modification, a *prima facie* case of obviousness has not been established.

**b. *Kerkhoven* is Not Applicable**

The Examiner attempts to prop up the rejection by arguing that "[i]t is prima facie obvious to combine two compositions each taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose." (Office Action of May 9, 2001, page 5, lines 15-17.) However, the present case differs from the facts of *In re Kerkoven*, 205 USPQ 1069 (CCPA 1980), cited by the Examiner to support of this argument. Moreover, it is impermissible for the Examiner attempt to rely on *Kerkhoven* as a short cut means to establishing a *prima facie* case of obviousness without first establishing the elements of a prima facie case as required by the Supreme court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966).

As characterized by the CCPA, the claims at issue in *Kerkoven* "require no more than the mixing together of two conventional spray-dried detergents." *Kerkoven* at 1072. In contrast, the composition of Lang example q cited by the Office is not directed to static mixtures of components, such as those of *Kerkoven*, that have no necessary interaction with one another. In fact, as discussed above, the Lang composition is a

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

complex reactive composition comprising various components including bases, couplers, and direct dyes.

Given that Lang example q is a complex chemical mixture, the modification suggested by the Office to the at least partial substitution of one of the reactive components is in no way equivalent to the mere "mixing together" situation on which *Kerkhoven* is based. Accordingly, based on the factual differences between the present case and those presented in *Kerkhoven*, the rejection relying on *Kerkhoven* is improper.

Moreover, the more recent Federal Circuit holding in *In re Geiger,* 2 U.S.P.Q.2d 1276 (Fed. Cir. 1987), is applicable to the present situation. In *Geiger,* the Appellants claimed a method of inhibiting scale formation on and corrosion of metallic parts in cooling water systems by use of compositions containing (1) a copolymer of sulfonated styrene/maleic anhydride (SSMA); (2) a water soluble zinc compound; and (3) an organo-phosphorus acid compound or water soluble salt. The collective prior art taught using each of these three components, separately or in a combination falling short of that claimed, for treating cooling water systems. The Board of Patent Appeals and Interferences held it *prima facie* obvious to combine the three components together for their known functions and to optimize the amount of each. *In re Geiger*, 2 U.S.P.Q.2d at 1277-78.

The Federal Circuit reversed the Board, emphasizing that "[o]bviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination." *Id.* at 688, 2 U.S.P.Q.2d at 1278. The court then proceeded to go through each of the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

references relied on showing why, absent hindsight, the skilled artisan would not have found it obvious to make the claimed composition.

While acknowledging that combining the three components of the claimed composition may have been obvious to try, the court stated it does not constitute the standard for combining references under § 103. *Id.*; *cf. In re Wesslau*, 147 U.S.P.Q. at 393 (holding "[i]t is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art".).

Thus, as in *Geiger*, even if components or compositions have known functions for the same purpose, the Examiner must nevertheless establish all the elements of a *prima facie* case including, among other things, some teaching, suggestion or incentive supporting the combination. However, the Examiner's reliance on *Kerkhoven* in an attempt to establish a *prima facie* case of obviousness, based on the argument that it is obvious to mix two compositions known for the same purpose, is misplaced given that an objective teaching, suggestion or incentive supporting the combination has not been established.

Therefore, since the Examiner has not established and the references do not contain sufficient objective teachings of a motivation to combine, a *prima facie* case of obviousness has not been established.

**B. Provisional Double Patenting Rejections**

Claims 26-60 were provisionally rejected on the ground of obviousness-type double patenting over claims 18-42 of co-pending Application No. 09/424,119 in view of

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

U.S. patent No. 4,976,742 to Rose. Although the Examiner has never presented a *prima facie* case of obviousness to support this rejection, the Terminal Disclaimer filed concurrently with the Appeal Brief obviates the rejection. The rejection should be withdrawn.

## IX. Conclusion

Each rejection should be reversed and withdrawn.

To the extent any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this Appeal Brief, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: May 3, 2002

By: _____
Mark J. Feldstein
Reg. No. 46,693

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

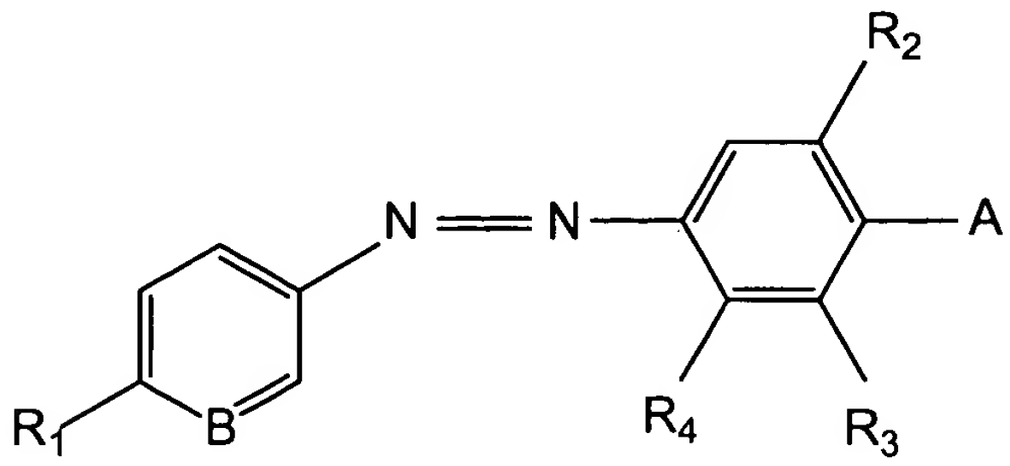
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

## APPENDIX - PENDING CLAIMS

26. A composition for the oxidation dyeing of keratin fibers comprising:

a) at least one oxidation base, and

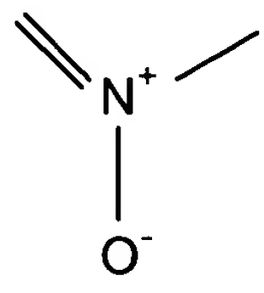
b) as direct dye, at least one 3-aminopyridine derivative chosen from the compounds of formula (I):



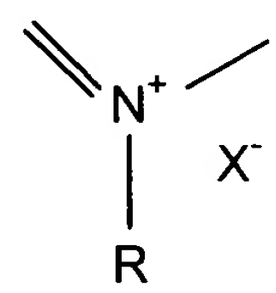

(I)

in which:

- B is chosen from formula (Ia) and (Ib):




(Ia)




(Ib)

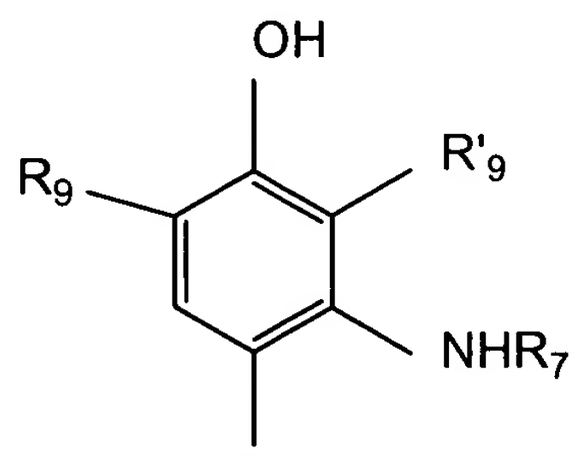
- R is a $C_1$-$C_4$ alkyl radical;
- $R_1$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_2$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- $R_4$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a nitro, an amino radical and a ($C_1$-$C_4$)acylamino radical;
- $R_3$ is a hydrogen atom, or $R_4$ and $R_3$ together form a 6-membered unsaturated ring bearing a hydroxyl substituent chelated with one of the nitrogen atoms of the azo double bond;
- A is a residue -$NR_5R_6$ in which $R_5$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical and $C_2$-$C_4$ polyhydroxyalkyl radical and $R_6$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a phenyl ring and a -$CH_2$-$SO_3Na$ radical;
- $X^-$ is chosen from a monovalent anion and a divalent anion, and

c) at least one coupler chosen from a meta-aminophenol derivative of formula (II), and an addition salt thereof with an acid:




(II)

in which:

- $R_7$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical and a $C_1$-$C_4$ monoaminoalkyl radical;

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- $R_8$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_9$ and $R'_9$, which are identical or different, are chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ alkoxy radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a $C_1$-$C_4$ monohydroxyalkoxy radical and a $C_2$-$C_4$ polyhydroxyalkoxy radical;

with the proviso that at least one of the substituents $R_7$, $R_8$, $R_9$ and $R'_9$, is not a hydrogen atom.

27. A composition according to Claim 26, wherein said keratin fibres are human keratin fibres.

28. A composition according to Claim 27, wherein said human keratin fibres are human hair.

29. A composition according to Claim 26, wherein said halogen atom is chosen from chlorine, bromine and fluorine.

30. A composition according to Claim 26, wherein said X is chosen from a halogen atom, a hydroxide, a hydrogen sulfate and a ($C_1$-$C_6$) alkyl sulfate.

31. A composition according to Claim 30, wherein said halogen atom is chosen from chlorine, bromine, fluorine and iodine.

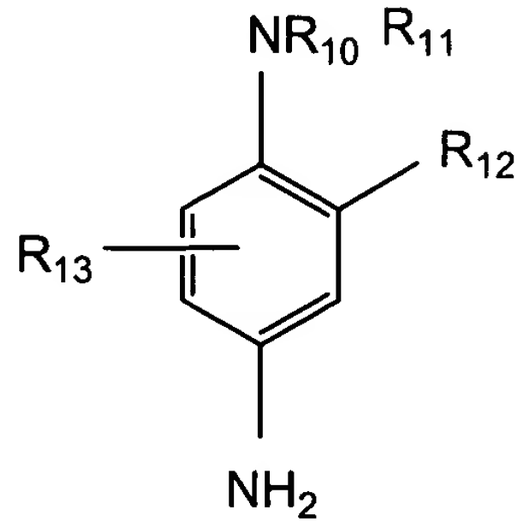
32. A composition according to Claim 30, wherein said ($C_1$-$C_6$) alkyl sulfate is chosen from a methyl sulfate and an ethyl sulfate.

33. A composition according to Claim 26, wherein said at least one oxidation base is chosen from a para-phenylenediamine, a double base, a para-aminophenol, an ortho-aminophenol and heterocyclic oxidation bases.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

34. A composition according to Claim 33, wherein said para-phenylenediamine is chosen from a compound of formula (III), and an addition salt thereof with an acid:




(III)

in which:

- $R_{10}$, is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a ($C_1$-$C_4$) alkoxy($C_1$-$C_4$) alkyl radical, a $C_1$-$C_4$ alkyl radical substituted with a nitrogenous group, phenyl and 4'-aminophenyl;
- $R_{11}$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a ($C_1$-$C_4$) alkoxy ($C_1$-$C_4$) alkyl radical and a $C_1$-$C_4$ alkyl radical substituted with a nitrogenous group;
- $R_{12}$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_1$-$C_4$ hydroxyalkoxy radical, an acetylamino ($C_1$-$C_4$) alkoxy radical, a mesylamino ($C_1$-$C_4$) alkoxy radical and a carbamoylamino ($C_1$-$C_4$) alkoxy radical,
- $R_{13}$ is chosen from a hydrogen atom, a halogen atom and a $C_1$-$C_4$ alkyl radical.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

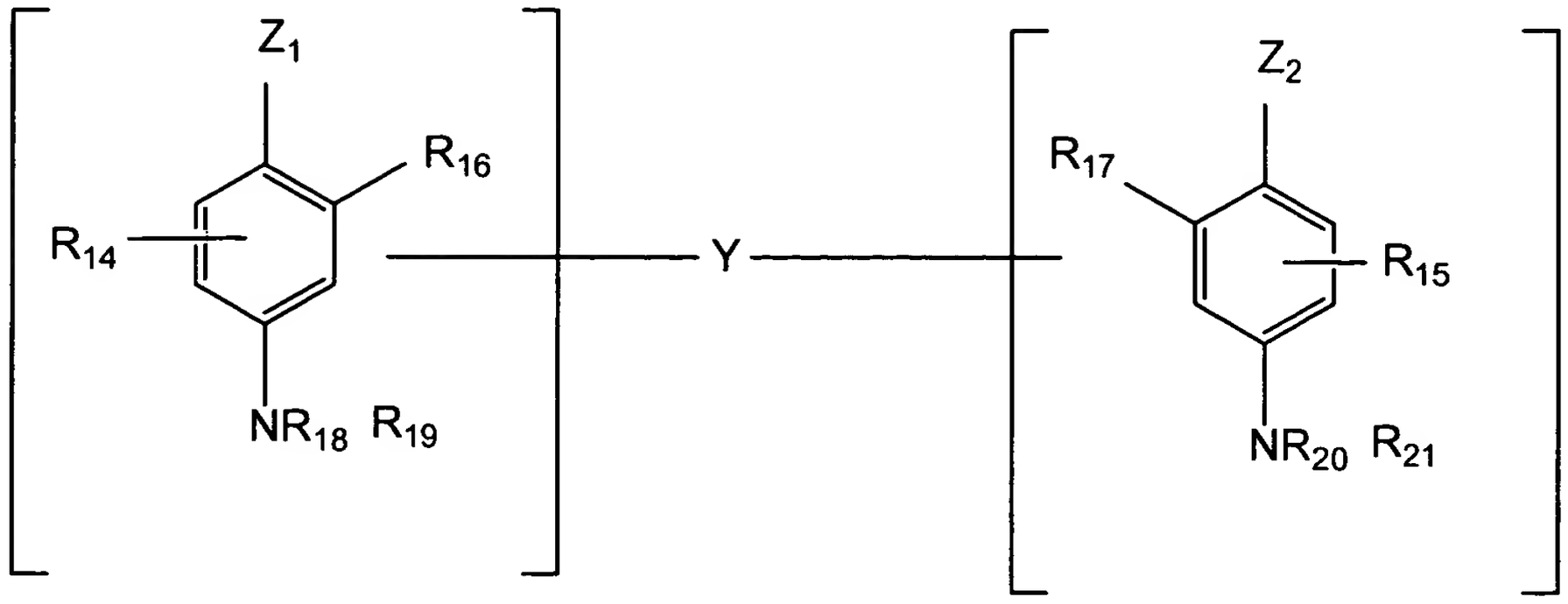
35. A composition according to Claim 34, wherein said halogen atom is chosen from chlorine, bromine, iodine and fluorine.

36. A composition according to Claim 33, wherein said para-phenylenediamine of formula (III) is chosen from para-phenylenediamine, para-tolylenediamine, 2-chloro-para-phenylenediamine, 2,3-dimethyl-para-phenylenediamine, 2,6-dimethyl-para-phenylenediamine, 2,6-diethyl-para-phenylenediamine, 2,5-dimethyl-para-phenylenediamine, N,N-dimethyl-para-phenylenediamine, N,N-diethyl-para-phenylenediamine, N,N-dipropyl-para-phenylenediamine, 4-amino-N,N-diethyl-3methylaniline, N,N-bis(β-hydroxyethyl)-para-phenylenediamine, 4-N,N-bis(b-hydroxyethyl)amino-2-methylaniline, 4-N,N-bis(b-hydroxyethyl)amino-2-chloroaniline, 2-b-hydroxyethyl-para-phenylenediamine, 2-fluoro-para-phenylenediamine, 2-isopropyl-paraphenylenediamine, N-(b-hydroxypropyl)-para-phenylenediamine, 2-hydroxymethyl-paraphenylenediamine, N,N-dimethyl-3-methyl-para-phenylenediamine, N-ethyl-N-(b-hydroxyethyl)-para-phenylenediamine, N-(b,g-dihydroxypropyl)-para-phenylenediamine, N-(4'-aminophenyl)-para-phenylenediamine, N-phenyl-para-phenylenediamine, 2-b-hydroxyethyloxy-para-phenylenediamine, 2-b-acetylaminoethyloxy-para-phenylenediamine, N-(b-methoxyethyl)-para-phenylenediamine, and addition salts thereof with an acid.

37. A composition according to Claim 33, wherein said double base is chosen from a compound of formula (IV), and an addition salt thereof with an acid:

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com



(IV)

in which:

- $Z_1$ and $Z_2$, which are identical or different, are chosen from a hydroxyl radical and an -NH2 radical, each of which is unsubstituted or substituted with a $C_1$-$C_4$ alkyl radical or with a linker arm Y;
- $R_{14}$ and $R_{15}$ are chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a $C_1$-$C_4$ aminoalkyl radical and a linker arm Y;
- $R_{16}$, $R_{17}$, $R_{18}$, $R_{19}$, $R_{20}$ and $R_{21}$, which are identical or different, are chosen from a hydrogen atom, a linker arm Y and a $C_1$-$C_4$ alkyl radical;
- said linker arm Y is chosen from a linear alkylene chain and a branched alkylene chain, each chain comprising from 1 to 14 carbon atoms, which can be interrupted or terminated with at least one nitrogenous group, at least one hetero-atom, r a mixture thereof and optionally substituted with at least one hydroxyl radical or a $C_1$-$C_6$ alkoxy radical;

with the proviso that said compounds of formula (IV) comprise only one linker arm Y per molecule.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

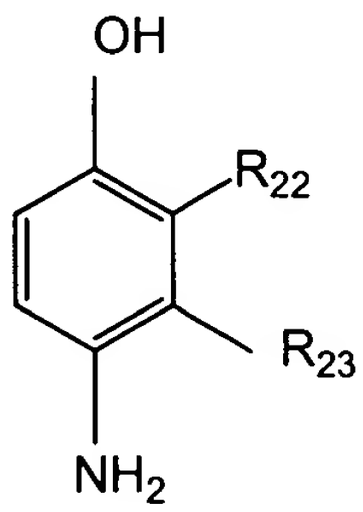
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

38. A composition according to Claim 37, wherein said at least one hetero atom is chosen from oxygen, sulphur and nitrogen.

39. A composition according to Claim 37, wherein said double base of formula (IV) is chosen from

N,N'-bis(b-hydroxyethyl)-N,N'-bis(4'-aminophenyl)-1,3-diaminopropanol, N,N'-bis(b-hydroxyethyl)-N,N'-bis(4'-aminophenyl)ethylenediamine, N,N'-bis(4-aminophenyl)tetramethylenediamine, N,N'-bis(b-hydroxyethyl)-N,N'-bis(4-aminophenyl) tetramethylenediamine, N,N'-bis(4-methylaminophenyl)tetramethylenediamine, N,N'-bis(ethyl)-N,N'-bis(4'-amino-3'-methylphenyl)ethylenediamine, 1,8-bis(2,5-diaminophenoxy)3,5-dioxaoctane, and an addition salt thereof with an acid.

40. A composition according to Claim 33, wherein said para-aminophenol is chosen from a compound of formula (V), and an addition salt thereof with an acid:




(V)

in which:

- $R_{22}$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a ($C_1$-$C_4$)alkoxy($C_1$-$C_4$)alkyl radical, a $C_1$-$C_4$ aminoalkyl radical and a hydroxy($C_1$-$C_4$)alkylamino($C_1$-$C_4$)alkyl radical,

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- $R_{23}$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a $C_1$-$C_4$ aminoalkyl radical, a cyano($C_1$-$C_4$)alkyl radical and a ($C_1$-$C_4$)alkoxy($C_1$-$C_4$)alkyl radical,

with the proviso that at least one of the substituents $R_{22}$ and $R_{23}$ is a hydrogen atom.

41. A composition according to Claim 40, wherein said para-aminophenol of formula (V) is chosen from para-aminophenol, 4-amino-3-methylphenol, 4-amino-3-fluorophenol, 4-amino-3-hydroxymethylphenol, 4-amino-2-methylphenol, 4-amino-2-hydroxymethylphenol, 4-amino-2-methoxymethylphenol, 4-amino-2-aminomethylphenol, 4-amino-2-(b-hydroxyethylaminomethyl)phenol, 4-amino-2-fluorophenol, and an addition salt thereof with an acid.

42. A composition according to Claim 33, wherein said ortho-aminophenol is chosen from 2-aminophenol, 2-amino-5-methyl phenol, 2-amino-6-methylphenol, 5-acetamido-2-aminophenol, and an addition salt thereof with an acid.

43. A composition according to Claim 33, wherein said heterocyclic oxidation bases are chosen from a pyridine derivative, a pyrimidine derivative, a pyrazole derivative, and an addition salt thereof with an acid.

44. A composition according to Claim 26, wherein said at least one oxidation base is present in an amount ranging from about 0.0005 to about 12% by weight relative to the total weight of the dye composition.

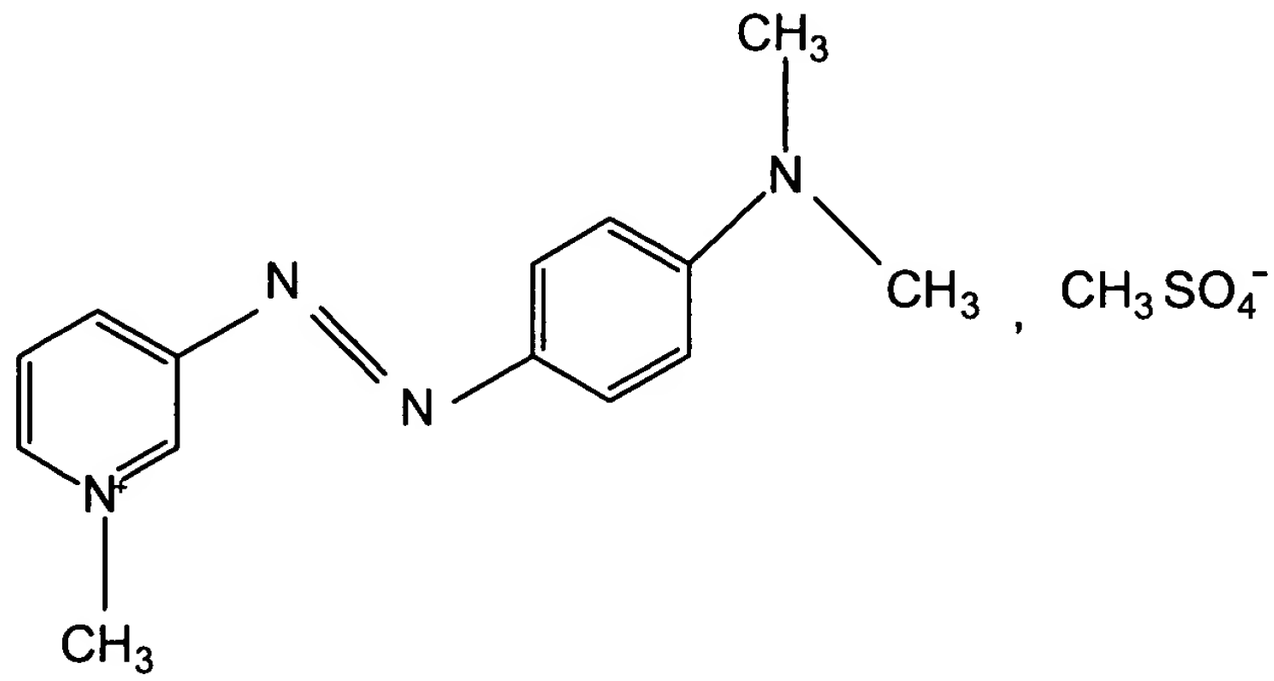
45. A composition according to Claim 44, wherein said at least one oxidation base is present in an amount ranging from about 0.005 to about 6% by weight relative to the total weight of the dye composition.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

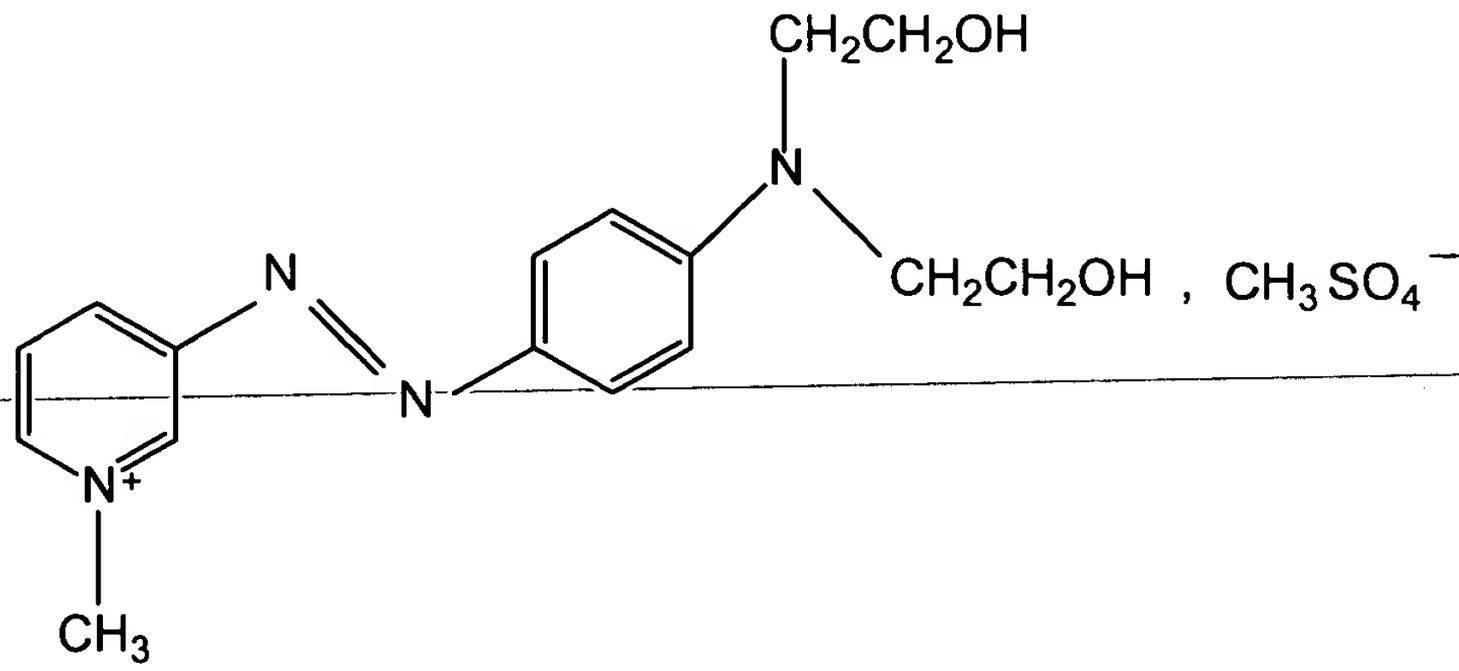
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

46. A composition according to Claim 26, wherein said at least one 3-aminopyridine derivative of formula (1) is chosen from:

- 4'-dimethylaminobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



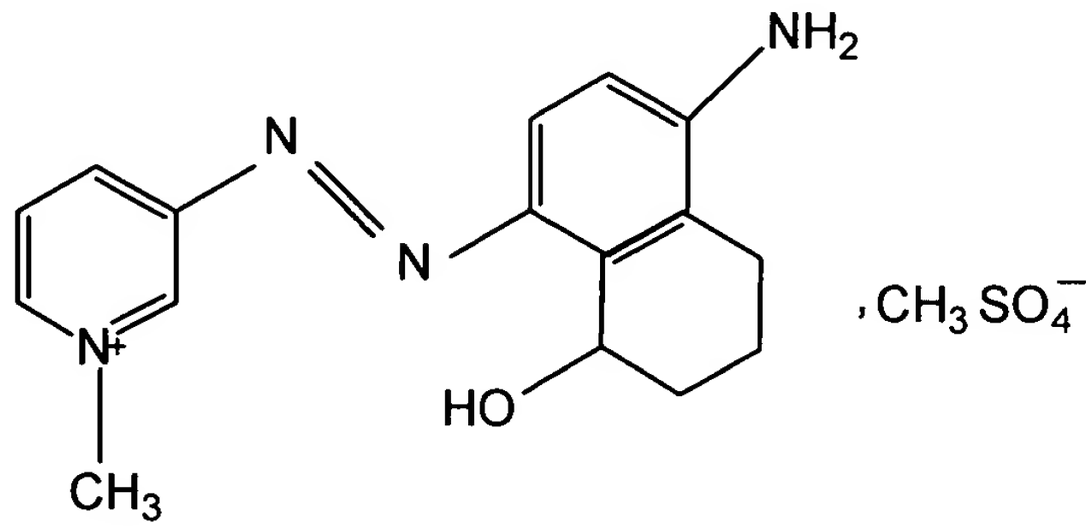
- 4'-bis(b-hydroxyethyl)aminobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



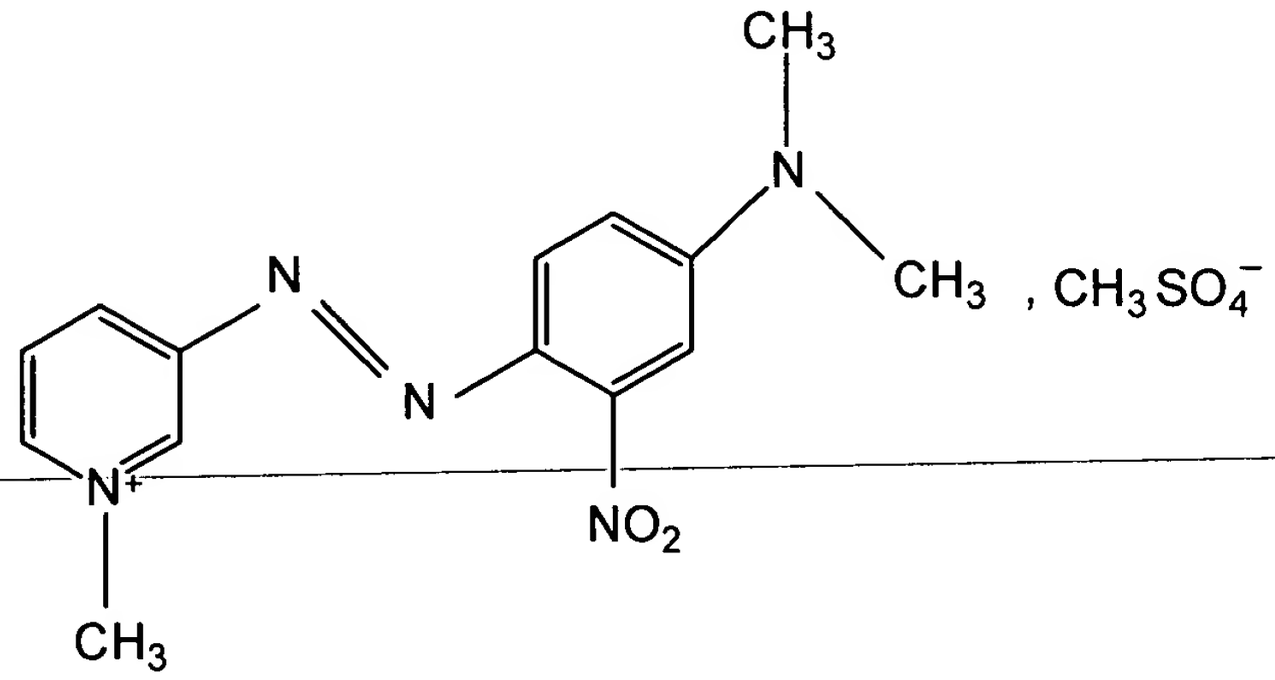
FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

4'-amino-8-hydroxynaphthalene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



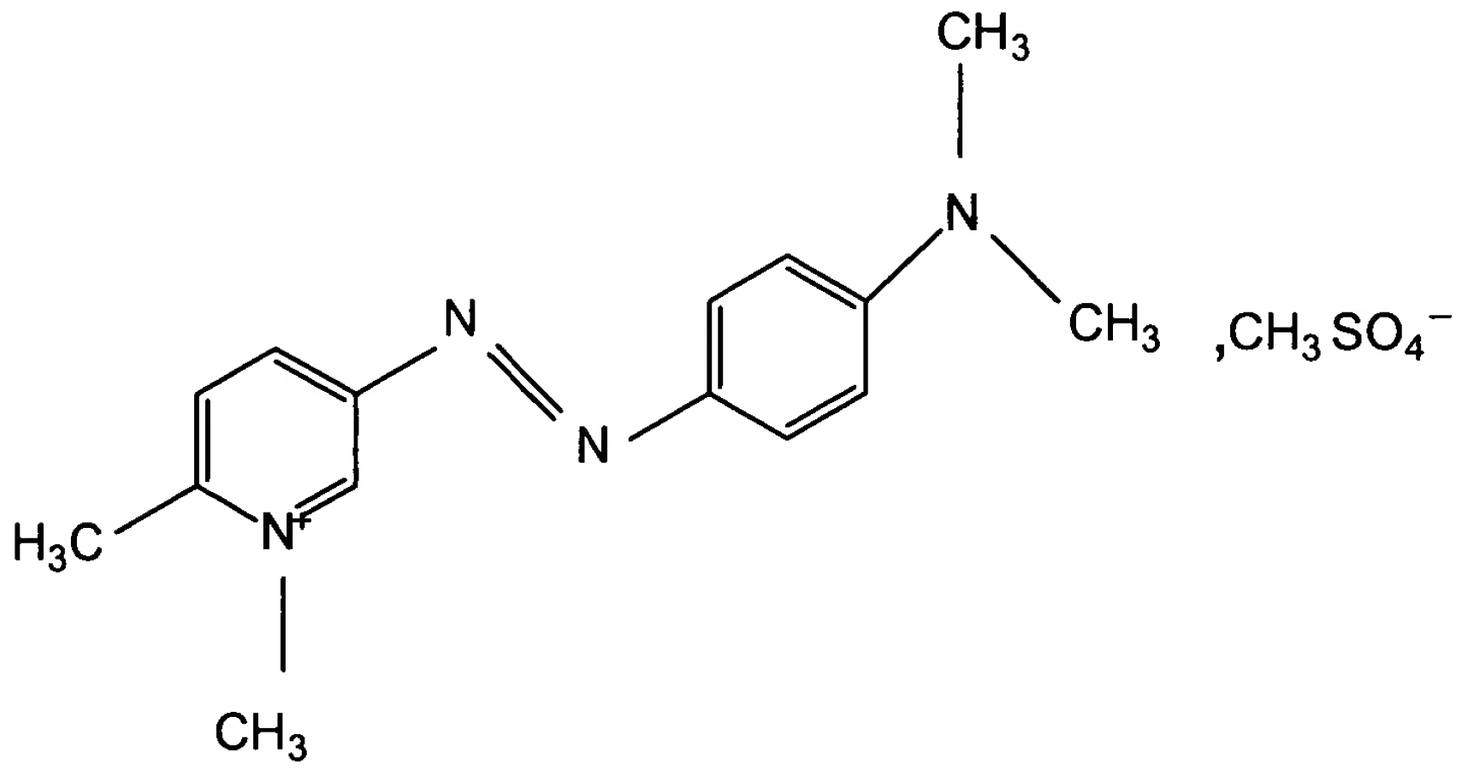

- 4'-dimethylamino-2'-nitrobenzene-1'l-azo-1-methyl-3-pyridinium methosulphate of formula:



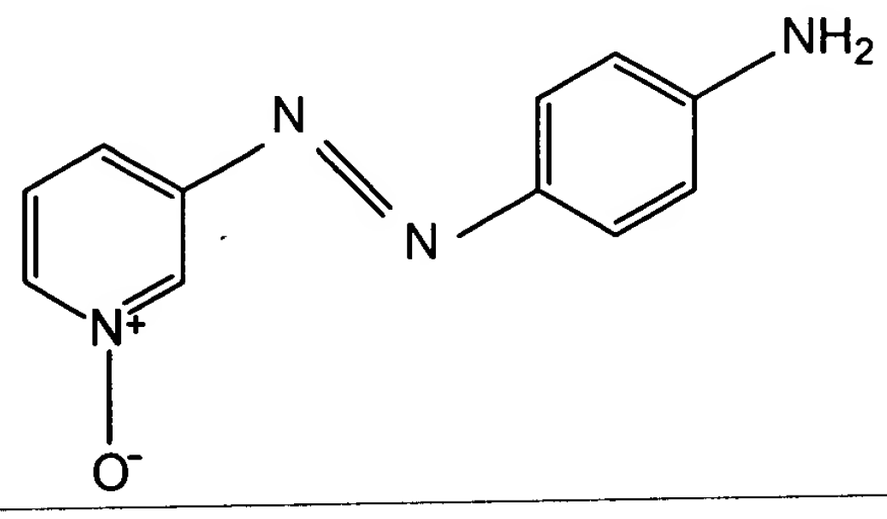

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- 4'-dimethylaminobenzene-1'-azo-1,6-dimethyl-3-pyridinium methosulphate of formula:



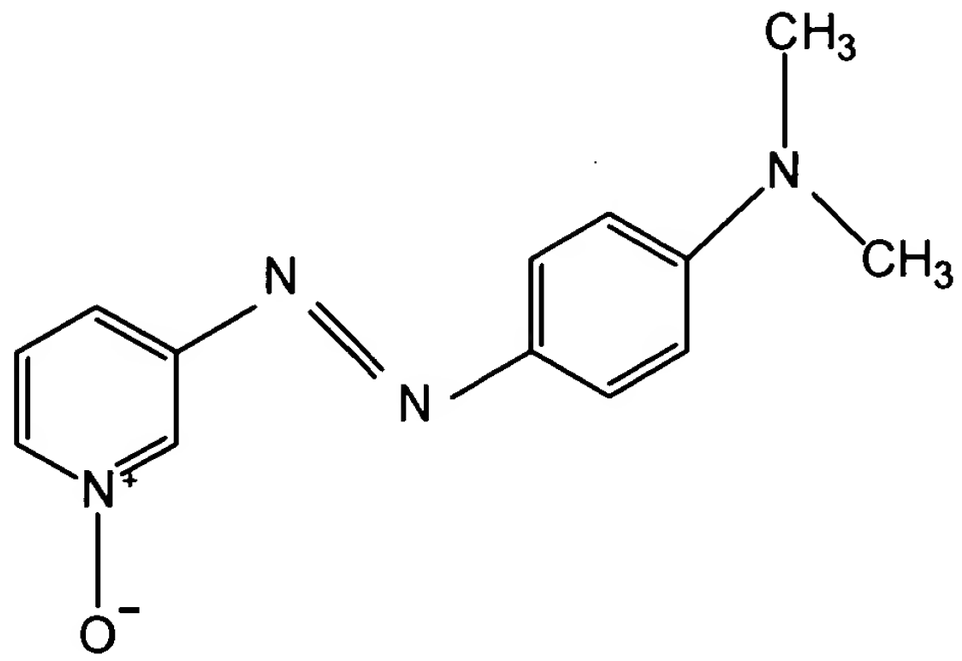

- 4'-aminobenzene-1'-azo-3-pyridine N-oxide of formula:



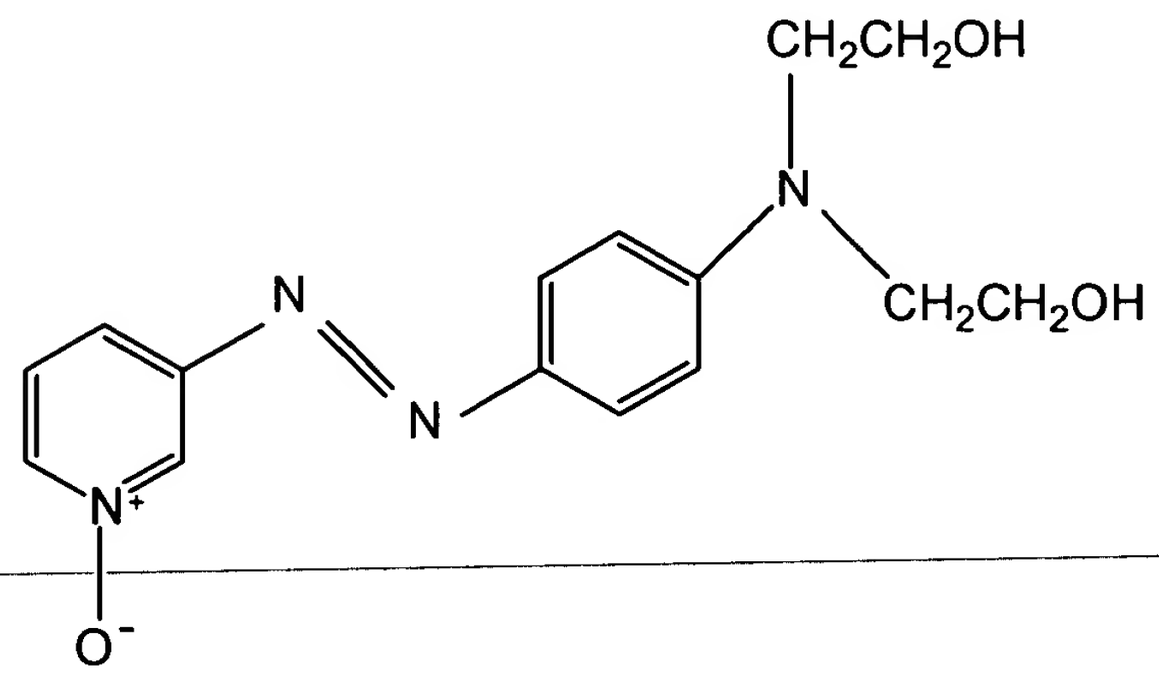

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- 4'-dimethylaminobenzene-1'-azo-3-pyridine N-oxide of formula:



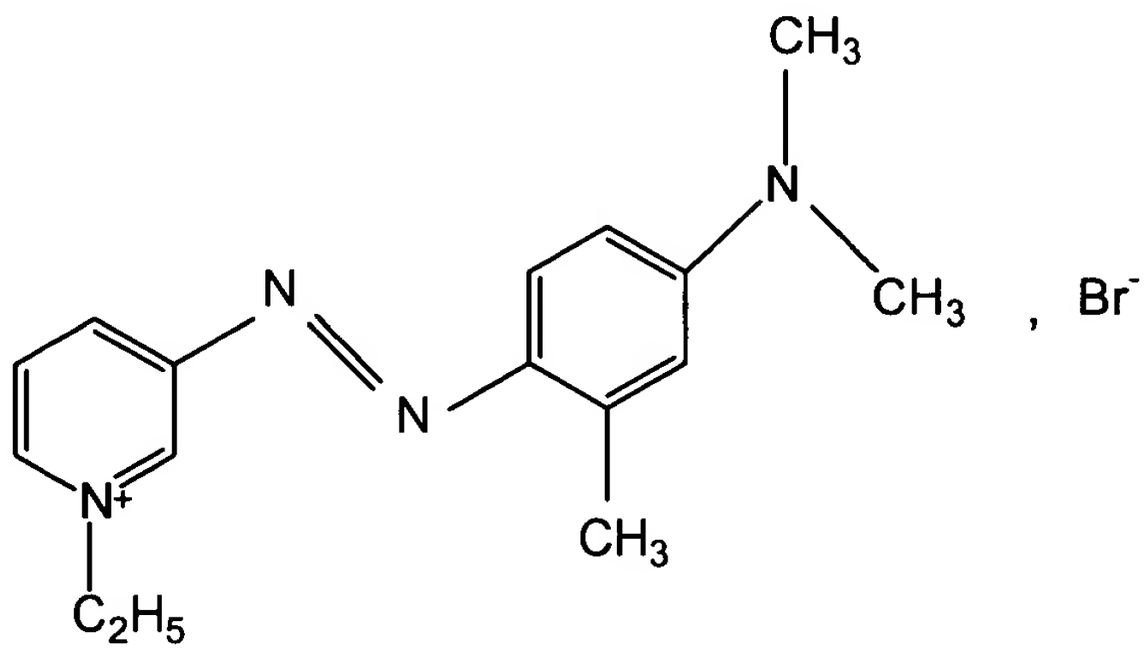
- 4'-N,N-bis(b-hydroxyethyl)aminobenzene-1'-azo-3-pyridine N-oxide of formula:



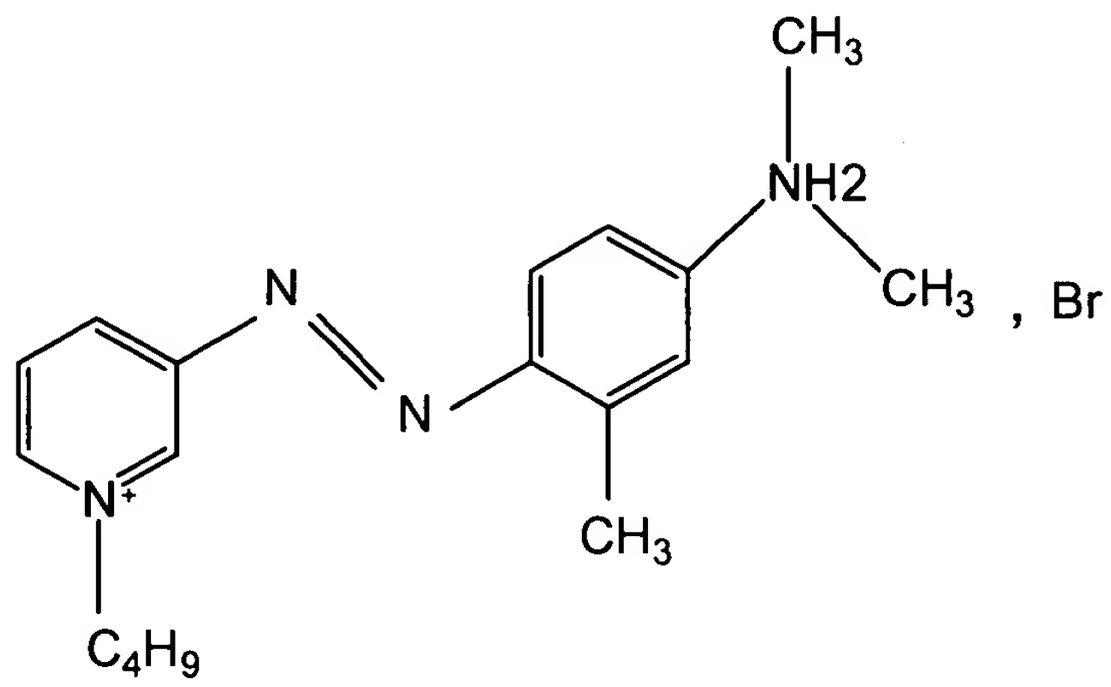
FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

4'-dimethylamino-2'-methylbenzene-1'-azo-1-ethyl-3-pyridinium ethosulphate of formula:



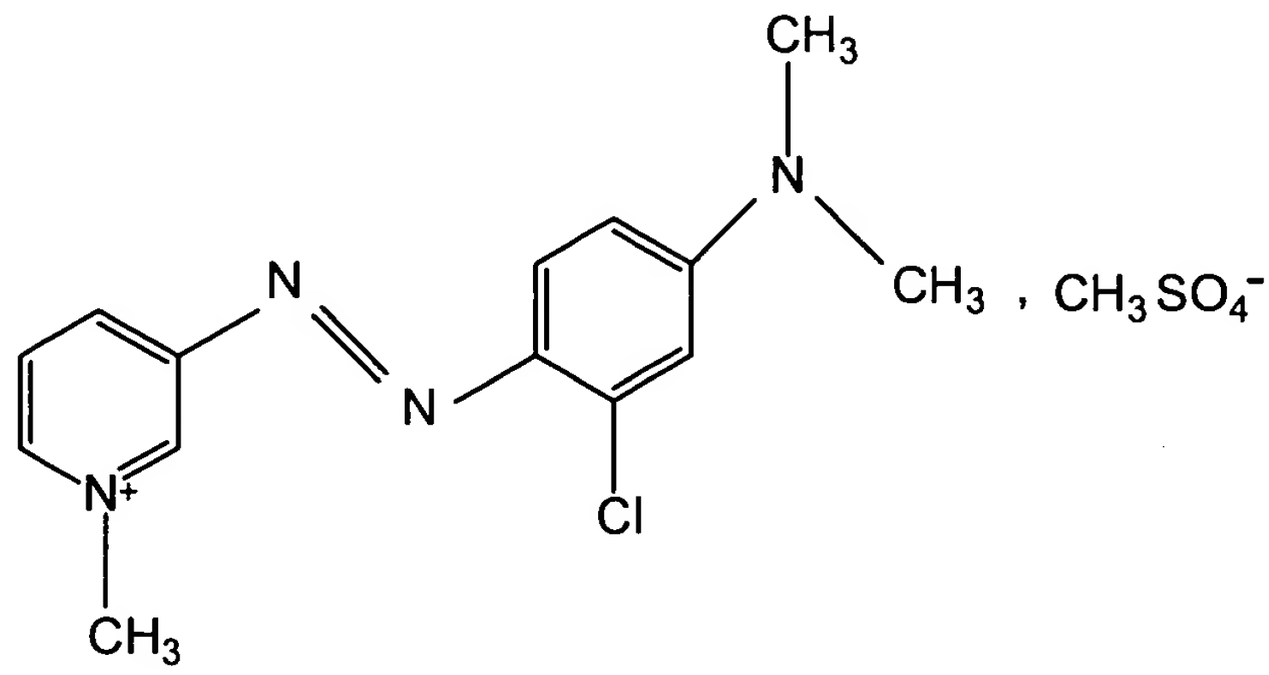

- 4'-dimethylamino-2'-methylbenzene-1'-azo-1-butyl-3-pyridinium bromide of formula:



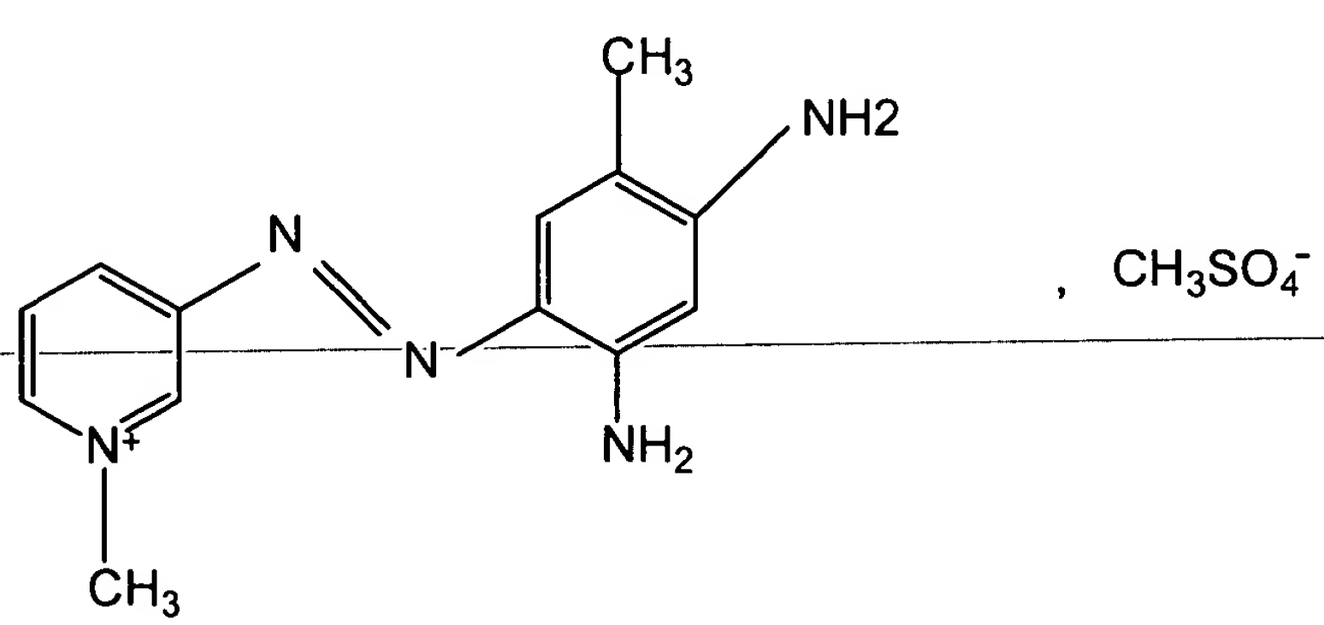

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- 4'-dimethylamino-2'-chlorobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



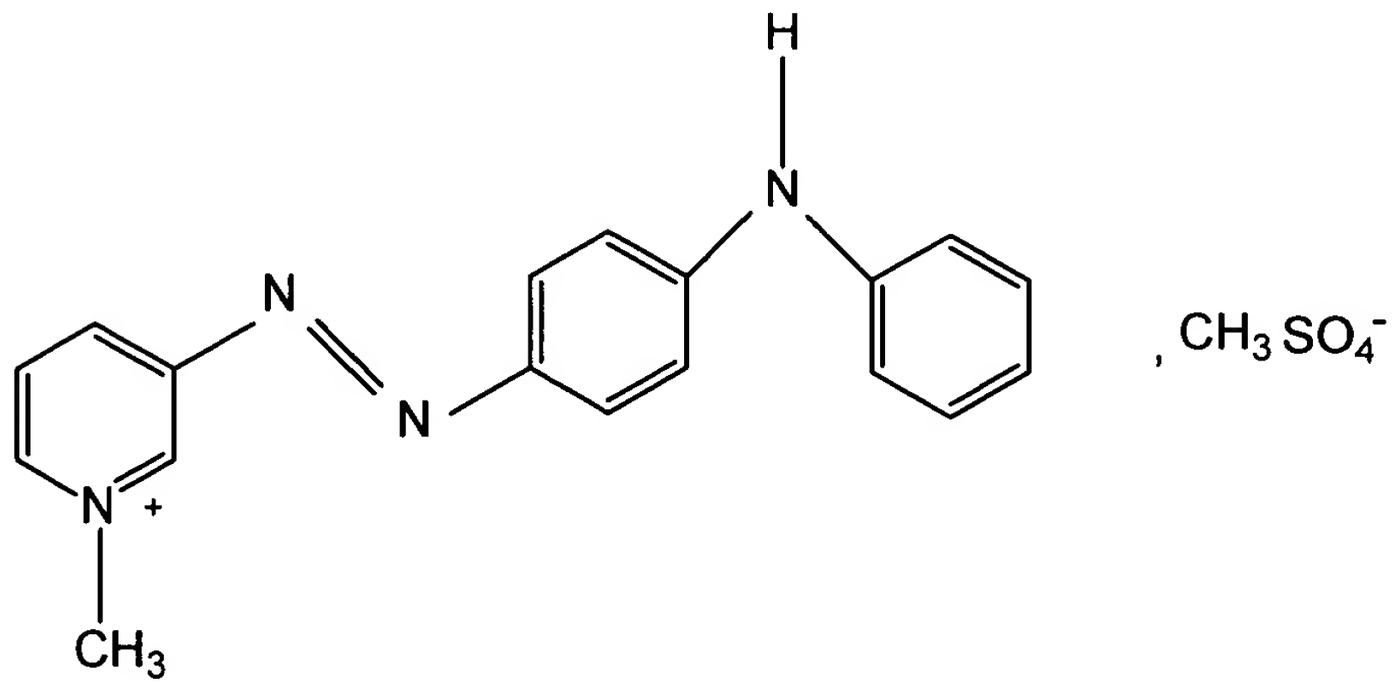
-2',4'-diamino-5'-methylbenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



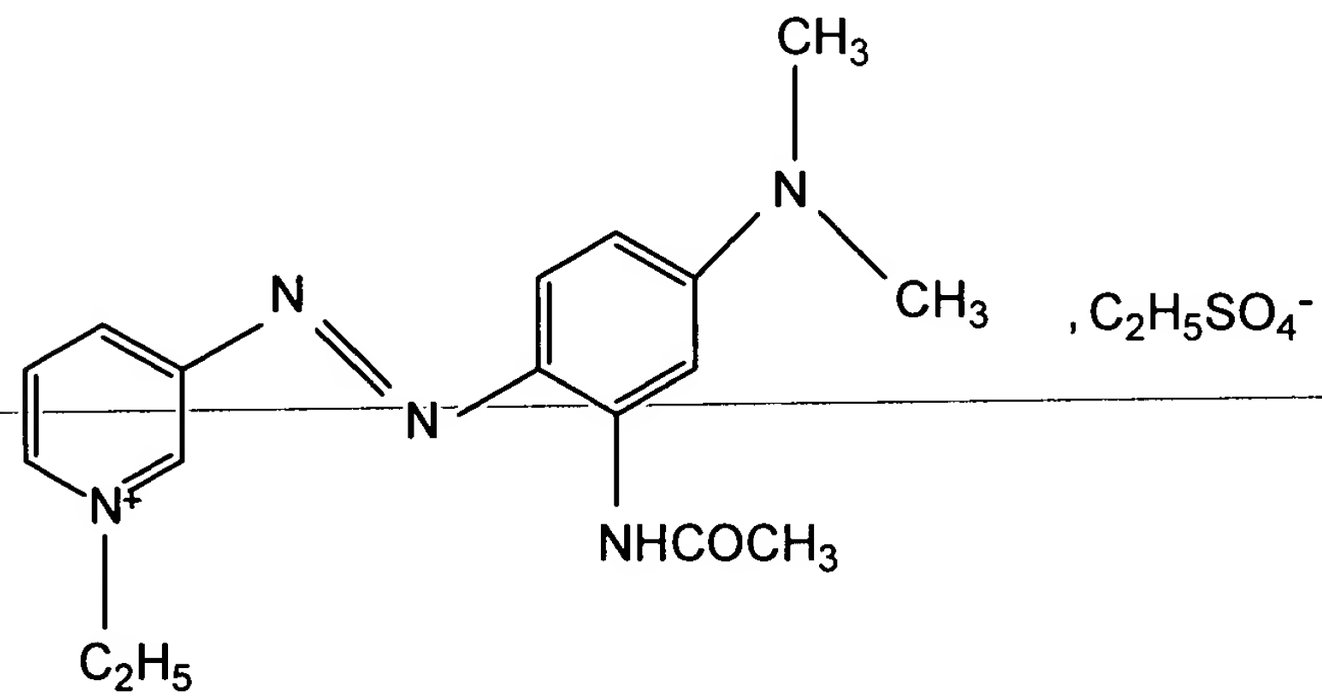
FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- 4'-phenylaminobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



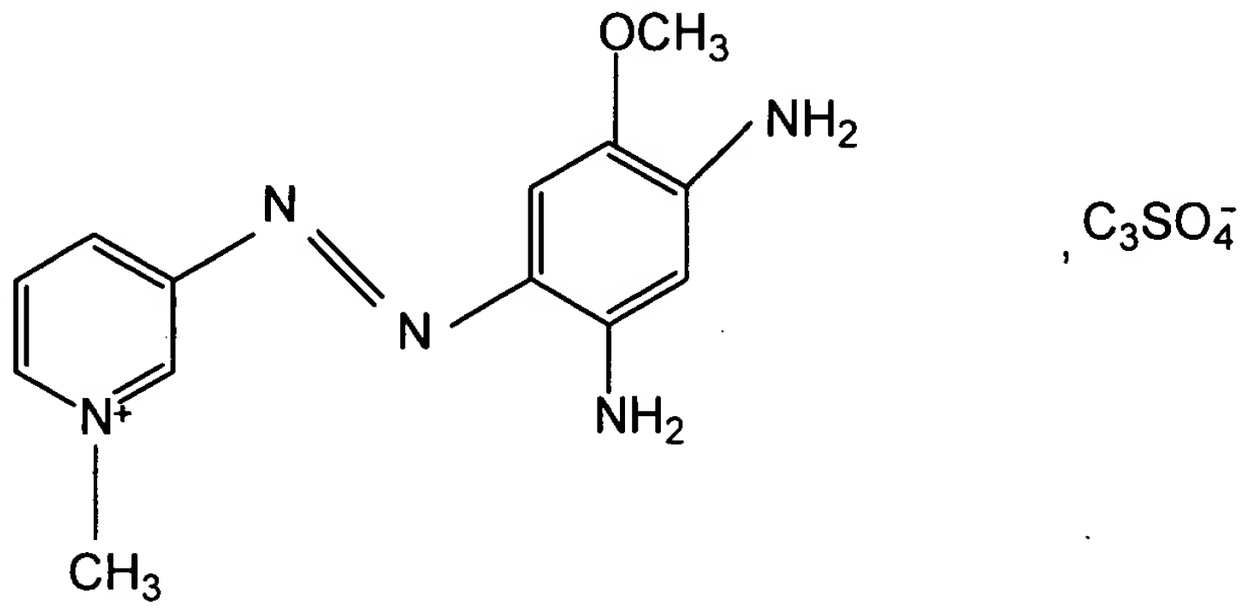

- 2'-acetylamino-4'-dimethylaminobenzene-1'-azo-1-ethyl-3-pyridinium ethosulphate of formula:




FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

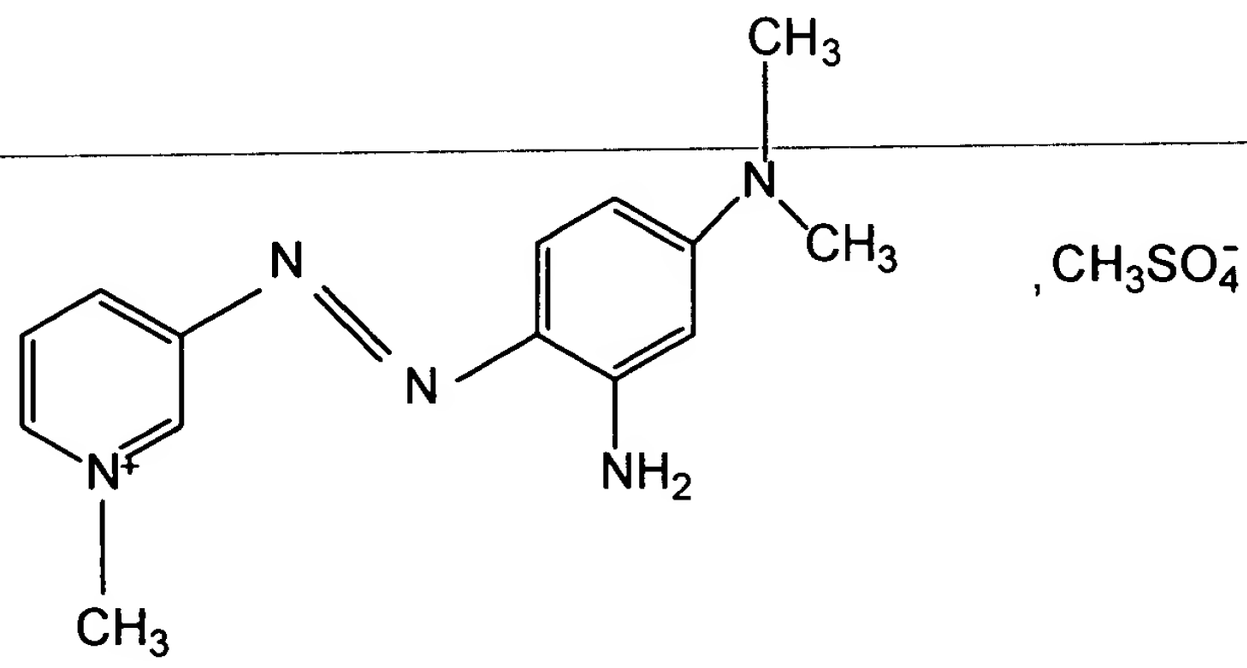
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- 2',4'-diamino-5-methoxybenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



and

- 2'-amino-4'-dimethylaminobenzene-1'-azo-1-methyl-3-pyridinium methosulphate of formula:



FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

47. A composition according to Claim 26, wherein said at least one 3-amino-pyridine derivative of formula (I) is present in an amount ranging from about 0.001 to about 10% by weight relative to the total weight of the dye composition.

48. A composition according to Claim 47, wherein said at least one 3-aminopyridine derivative of formula (I) is present in an amount ranging from about 0.01 to about 5% by weight relative to the total weight of the dye composition.

49. A composition according to Claim 26, wherein said meta-aminophenol derivative of formula (II) is chosen from 5-amino-2-methoxyphenol, 5-amino-2-(b-hydroxyethyloxy)phenol, 5-amino-2-methylphenol, 5-N-(b-hydroxyethyl)amino-2-methylphenol, 5-N-(b-hydroxyethyl)amino-4-methoxy-2-methylphenol, 5-amino-4-methoxy2-methylphenol, 5-amino-4-chloro-2-methylphenol, 5-amino-2,4-dimethoxyphenol, 5-(g-hydroxypropylamino)-2-methylphenol, 3-amino-2-chloro-6-methylphenol, 3-amino-6chlorophenol, 3-(b-aminoethyl)amino-6-chlorophenol, and an addition salt thereof with an acid.

50. A composition according to Claim 26, wherein said meta-aminophenol derivative of formula (II) is present in an amount ranging from about 0.0001 to about 10% by weight relative to the total weight of the dye composition.

51. A composition according to Claim 50, wherein said meta-aminophenol derivative of formula (II) is present in an amount ranging from about 0.005 to about 5% by weight relative to the total weight of the dye composition.

52. A composition according to Claim 26, further comprising at least one coupler other than said meta-aminophenol derivative of formula (II), at least one direct dye other than said 3-aminopyridine derivatives of formula (I), or a mixture thereof.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

53. A composition according to Claim 26, wherein said addition salt with an acid is chosen from a hydrochloride, a hydrobromide, a sulphate, a tartrate, a lactate and an acetate.

54. A composition according to Claim 26, wherein said composition is in a medium suitable for dyeing.

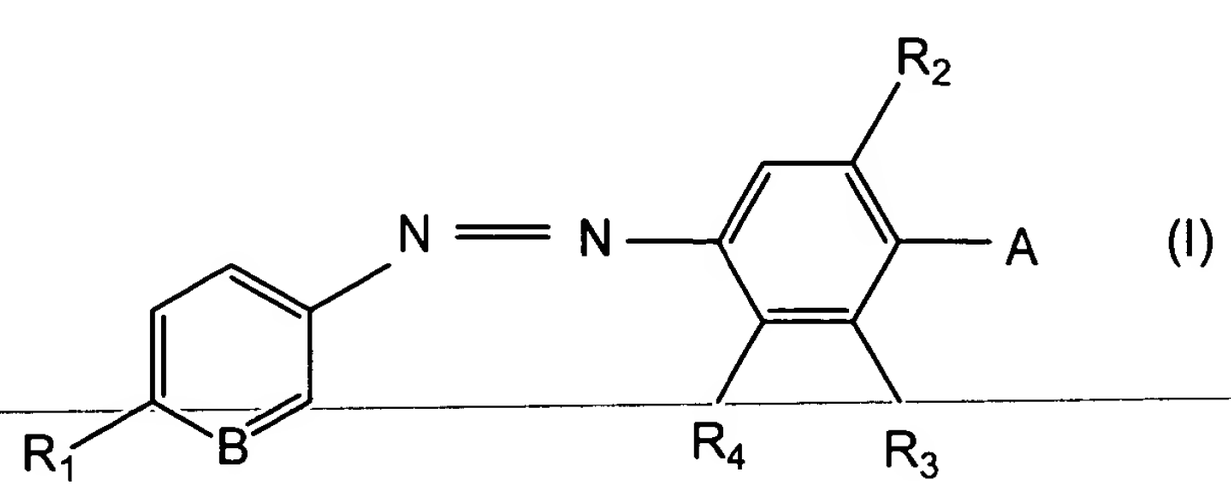
55. A composition according to Claim 54, wherein said medium suitable for dyeing comprises water or a mixture of water and at least one organic solvent.

56. A composition according to Claim 26, wherein said composition has a pH ranging from about 3 to about 12.

57. A process for dyeing keratin fibers comprising: 1) applying at least one dye composition to keratin fibers, wherein said at least one dye composition comprises

a) at least one oxidation base,

b) as a direct dye, at least one 3-aminopyridine derivative chosen from the compounds of formula (I):



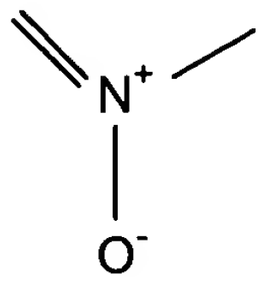

(I)

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

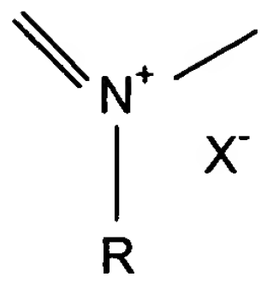
1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

in which:

- B is chosen from formula (Ia) and (Ib):



(Ia)



(Ib)

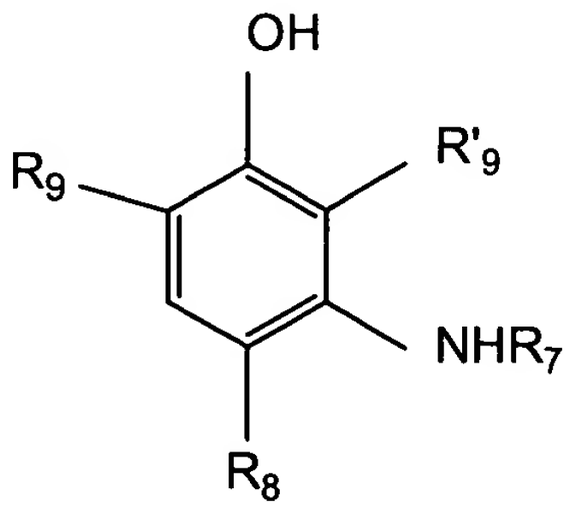
- R is a $C_1$-$C_4$ alkyl radical;
- $R_1$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_2$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_4$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a nitro, an amino radical and a ($C_1$-$C_4$)acylamino radical;
- $R_3$ is a hydrogen atom, or $R_4$ and $R_3$ together form a 6-membered unsaturated ring bearing a hydroxyl substituent chelated with one of the nitrogen atoms of the azo double bond;
- A is a residue $-NR_5A_6$ in which $R_5$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical and a $C_2$-$C_4$ polyhydroxyalkyl radical and $R_6$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a phenyl ring and a $-CH_2-SO_3Na$ radical;

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

- $X^-$ is chosen from a monovalent anion and a divalent anion, and

c) at least one coupler chosen from a meta-aminophenol derivative of formula (II), and an addition salt thereof with an acid:




(II)

in which:

- $R_7$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical and a $C_1$-$C_4$ monoaminoalkyl radical;
- $R_8$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical and a $C_1$-$C_4$ alkoxy radical;
- $R_9$ and $R'_9$, which are identical or different, are chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ alkoxy radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a $C_1$-$C_4$ monohydroxyalkoxy radical and a $C_2$-$C_4$ polyhydroxyalkoxy radical;

with the proviso that at least one of the substituents $R_7$, $R_8$, $R_9$ and $R'_9$ is not a hydrogen atom; and

2) developing a color at an acidic, neutral or alkaline pH with the aid of an oxidizing agent, wherein said oxidizing agent is added to said at least one dye composition at the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

time of application of said at least one dye composition, or wherein said oxidizing agent is present in an oxidizing composition, and wherein said oxidizing composition is applied simultaneously or sequentially with said at least one dye composition.

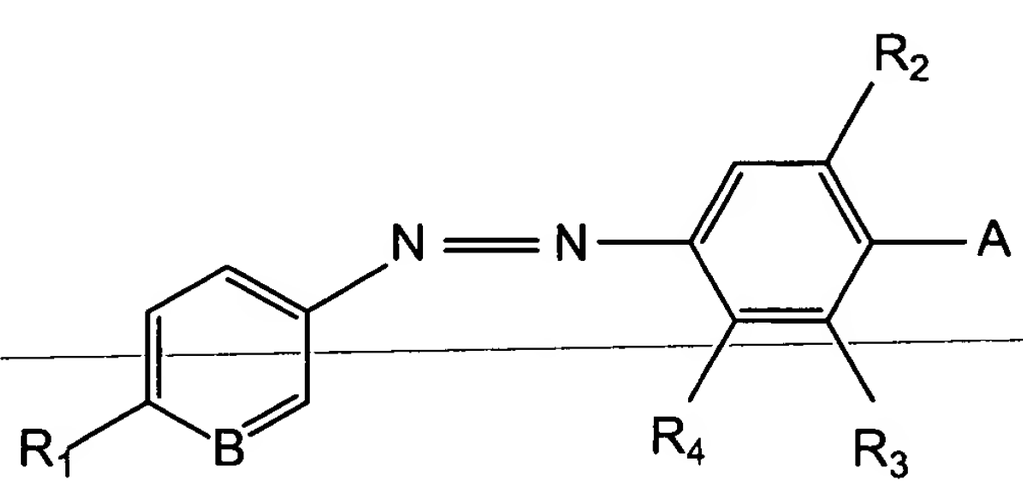
58. A process according to Claim 57, wherein said oxidizing agent present in the oxidizing composition is chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts, peracids and enzymes.

59. A process according to Claim 58, wherein said persalts are chosen from perborates, percarbonates and persulphates.

60. A multi-compartment dyeing device or kit comprising at least two compartments, wherein one compartment comprises an oxidizing composition, and another compartment comprises at least one dye composition, wherein said at least one dye composition comprises

a) at least one oxidation base,

b) as direct dye, at least one 3-aminopyridine derivative chosen from the compounds of formula (I):



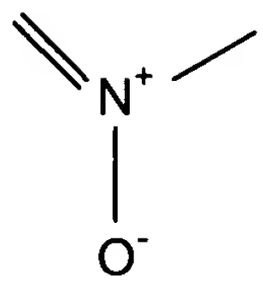

(I)

in which:

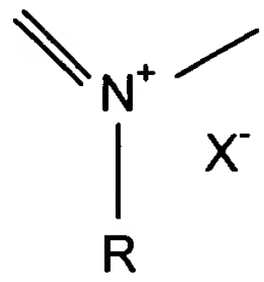
- B is chosen from formula (Ia) and (Ib):

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com



(Ia)



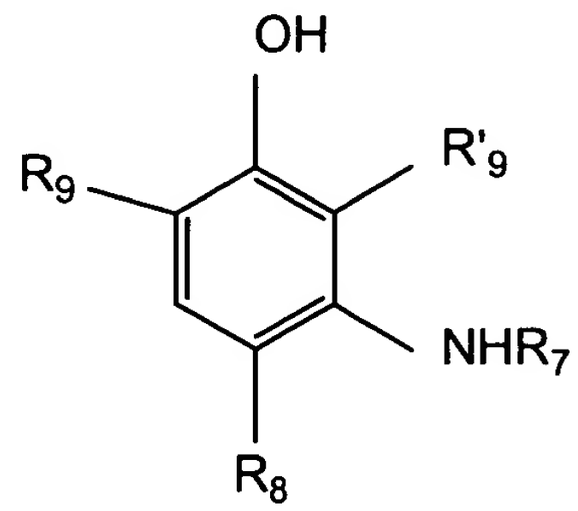
(Ib)

- R is a $C_1$-$C_4$ alkyl radical;
- $R_1$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_2$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, and a $C_1$-$C_4$ alkoxy radical;
- $R_4$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a nitro, an amino radical and a ($C_1$-$C_4$)acylamino radical;
- $R_3$ is a hydrogen atom, or $R_4$ and $R_3$ together form a 6-membered unsaturated ring bearing a hydroxyl substituent chelated with one of the nitrogen atoms of the azo double bond;
- A is a residue $-NR_5R_6$ in which $R_5$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical and $C_2$-$C_4$ polyhydroxyalkyl radical and $R_6$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a phenyl ring and a $-CH_2-SO_3Na$ radical;
- $X^-$ is chosen from a monovalent anion and a divalent anion, and

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

c) at least one coupler chosen from a meta-aminophenol derivative of formula (II), and an addition salt thereof with an acid:




(II)

in which:

- $R_7$ is chosen from a hydrogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical and a $C_1$-$C_4$ monoaminoalkyl radical;
- $R_8$ is chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical and a $C_1$-$C_4$ alkoxy radical;
- $R_9$ and $R'_9$, which are identical or different, are chosen from a hydrogen atom, a halogen atom, a $C_1$-$C_4$ alkyl radical, a $C_1$-$C_4$ alkoxy radical, a $C_1$-$C_4$ monohydroxyalkyl radical, a $C_2$-$C_4$ polyhydroxyalkyl radical, a $C_1$-$C_4$ monohydroxyalkoxy radical and a $C_2$-$C_4$ polyhydroxyalkoxy radical;

with the proviso that at least one of the substituents $R_7$, $R_8$, $R_9$ and $R'_9$, is not a hydrogen atom.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com